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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,724	12/11/2003	Noriaki Sakamoto	14225-033001 / F1030575US	9731
26211	7590	05/19/2006	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			ANDUJAR, LEONARDO	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,724

Applicant(s)

SAKAMOTO, NORIAKI

Examiner

Leonardo Andújar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 8-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-7) in the reply filed on 04/17/2006 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Fee et al. (US 2003/0164554).
5. Regarding claim 1, Fee (e.g. fig. 2) shows a circuit device 10 comprising: conductive pattern (i.e. lead frame) circuit element 12, affixed onto the conductive patterns; and an insulating resin 26, sealing the conductive pattern and the circuit element while exposing at least the bottom surface of the conductive pattern; wherein recessed part 30 is formed at the side surface of the insulating resin (see fig. 1), and

Fig. 2

6. Regarding claim 2, Fee teaches that the circuit device is mounted by attaching brazing material (e.g. solder) to the exposed side surfaces and bottom surface of the conductive pattern (e.g. 0030).
7. Regarding claim 3, Fee teaches that the circuit element is a semiconductor element and the conductive pattern that is disposed at the peripheral part and the semiconductor element are electrically connected.
8. Regarding claim 4, Fee teaches that the conductive pattern comprises die pad 14 and bonding pad 18/20 and the circuit element is mounted on the die pad and the bonding pads are disposed so as to surround the die pad.
9. Regarding claim 6, Fee teaches that the covering resin is formed on the surface of the conductive pattern and the circuit element. Also, the conductive pattern are electrically connected via opening provided in the covering resin (see 0030)

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fee et al. (US 2003/0164554) in view of Jung et al. (US 2002/0056926).

12. Regarding claim 5, Fee shows most aspects of the instant invention except for plating on the rear surface and side surfaces of the conductive patterns that is exposed from the insulating resin. Nevertheless, Jung (e.g. fig. 2) shows a plating 250/254 can be provided on the exposed surfaces of the pads including the rear surface and side surface to protect them from contamination or corrosion (e.g. pp 00017 & 0034). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a plating on the rear surface and side surface of the conductive pattern that is exposed to prevent the pads from corrosion or contamination as taught by Jung.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fee et al. (US 2003/0164554) in view of Koon et al. (US 6,836,009).

14. Regarding claim 6, Fee shows most aspects of the instant invention including a covering resin 26. Fee does not teach that the covering resin or encapsulant is made of a photosensitive material. Nevertheless, Koon teaches that photosensitive resins can be used to encapsulate devices (col. 10/lls. 65-66). It would have been obvious to one

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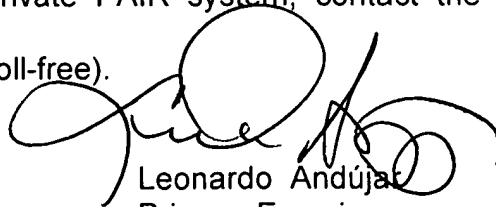
having ordinary skill in the art at the time the invention was made to use a photosensitive resin material as encapsulant in the device disclosed by Fee as suggested by Koon since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonardo Andújar whose telephone number is 571-272-1912. The examiner can normally be reached on Mon through Thu from 9:00 AM to 7:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leonardo Andújar
Primary Examiner
Art Unit 2826